Remarks

35 U.S.C. §103

On page 2 of the Office Action, at paragraphs 2 and 3, claims 7 to 15, 17 to 22, and 24 to 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Schoenberg (US 4,514,465) in view of Longmoore et al. (US 6,497,965) and Plume (US 6,846,863). Applicants respectfully traverse this rejection to the extent it is applied to the claims as now presented.

Applicants note that claim 9 was canceled in applicants' 1.111 response of April 25, 2006. Claims 24 and 25 are now canceled.

Independent claim 7 as now amended recites in part that:

> - the first outer layer comprises primary fatty amidic wax in an amount of 15% to 50% of the amount of primary fatty amidic wax in the first substrate layer; and the second outer layer comprises primary fatty amidic wax in an amount of 15% to 50% of the amount of primary fatty amidic wax in the second substrate layer;
> - at least one of the first and second outer layers, and the first and second substrate layers comprises from 1,000 ppm to 5,000 ppm of a transition metal salt of stearic acid, or ester of stearic acid; and
> - the first and second substrate layers each comprises from 4,000 ppm to 10,000 ppm of oleamide.

With respect to amended claim 7, the applicants respectfully submit that no new matter has been added. Support in the specification for the first two features listed above has already been demonstrated in prior responses. It will be noted that the second feature encompasses the subject matter of former claim 24, now canceled. Support for the third feature (first and second substrate layers each comprises from 4,000 ppm to 10,000 ppm of oleamide) can be found at page 19, Table 2.

Independent claim 14 as now amended recites in part that:

> - the first outer layer comprises primary fatty amidic wax in an amount of 15% to 50% of the amount of primary fatty amidic wax in the substrate layer; and the second outer layer comprises primary fatty amidic wax in an amount of 15% to 50% of the amount of primary fatty amidic wax in the substrate layer;
> - at least one of the first and second outer layers, and the substrate layer

comprises from 1,000 ppm to 7,000 ppm of a transition metal salt of stearic acid, or ester of stearic acid; and

- the substrate layer comprises from 4,000 ppm to 10,000 ppm of oleamide.

With respect to amended claim 14, the applicants respectfully submit that no new matter has been added. Support in the specification for the first two features listed above has already been demonstrated in prior responses. It will be noted that the second feature encompasses the subject matter of former claim 25, now canceled. Support for the third feature (the substrate layer comprises from 4,000 ppm to 10,000 ppm of oleamide) can be found at page 28, Table 14.

New dependent claim 26 includes an additional limitation that the first and second outer layers each comprises from 3,000 ppm to 6,000 ppm of primary fatty amidic wax. The applicants submit that no new matter has been added; support for this amendment can be found i.a. at page 8, line 30 to page 9, line 3, and page 10, lines 20 to 30 of the specification.

New dependent claim 27 includes an additional limitation that the first and second outer layers each comprises from 3,000 ppm to 6,000 ppm of primary fatty amidic wax. The applicants submit that no new matter has been added; support for this amendment can be found i.a. at page 8, line 30 to page 9, line 3, and page 13, lines 16 to 20.

The result of the above amendments is that some of the examples so designated in the specification are, as a result of narrowing of the claims, outside the claim scope.

Independent claims 7 and 14 include among others three requirements: that

- a first and second outer layer each comprises primary fatty amidic wax in an amount of 15% to 50% of the amount of primary fatty amidic wax in the respective substrate layer (claim 7); or that a first and second outer layer each comprises primary fatty amidic wax in an amount of 15% to 50% of the amount of primary fatty amidic wax in the substrate layer (claim 14);

- from 1,000 ppm to 5,000 ppm of a transition metal salt of stearic acid, or ester of stearic acid, is present in at least one of the first and second outer layers, and the first and second substrate layers (or substrate layer for claim 14); and

- the first and second substrate layers (claim 7) or the substrate layer (claim 14) each comprises from 4,000 ppm to 10,000 ppm of oleamide.

The benefit of the combination of these components in a single film can be seen in Example 24 of Table 7. Example 24 was the same in all relevant particulars as Example 23, but included 5,000 ppm glycerol monostearate in each of the substrate layers. Example 24 thus included, in at least one of the first and second outer layers, and the first and second substrate layers, "from 1,000 ppm to 5,000 ppm of a transition metal salt of stearic acid, or ester of stearic acid".

In contrast, the film of Example 23 had no GMS or other salt or ester of stearic acid.

The result (see Table 7) was that the first and second outer layers of the film of Example 24 each had an outside surface total amide coating of 14.3 micrograms/inch^2, compared with only 10.9 micrograms/inch^2 for Example 23. The higher amide surface coating is beneficial in providing a polymeric film that exhibits adequate film surface properties characterized by a low coefficient of friction (COF) and high slip. These properties are dictated by the need for the film to run properly on packaging equipment used by food processors and other packagers, for example, on Vertical Form Fill Seal (VFFS) equipment.

Table 8 discloses Examples 25 and 26, that have outer layers comprising a primary fatty amidic wax in an amount of only 10% of the amount of primary fatty amidic wax in the respective substrate layers. Also, neither Example 25 nor Example 26 had any oleamide in the substrate layers. Example 27 did have 5,000 ppm of oleamide in each of the substrate layers, but had outer layers comprising a primary fatty amidic wax in an amount of only 5% of the amount of primary fatty amidic wax in the respective substrate layers. Thus, none of Examples 25 to 27 fall within the scope of amended claim 7.

In contrast, in Example 28:

- the first and second outer layers comprised primary fatty amidic wax (erucamide and oleamide) in an amount of 19% (thus from 15% to 50%) of the amount of primary fatty amidic wax in the respective substrate layer;
- at least one of the first and second outer layers, and the first and second substrate layers comprised 2000 ppm zinc stearate (thus from 1,000 ppm to 5,000 ppm of a transition metal salt of stearic acid, or ester of stearic acid); and
- the first and second substrate layers each comprised 8,000 ppm (thus from 4,000 ppm to 10,000 ppm) of oleamide.

The beneficial result (see Table 8) was that the first and second outer layers of the film of Example 28 had an outside surface total amide coating of 15.8 micrograms/inch^2, compared with only 5.3, 8.3, and 4.2 micrograms/inch^2 respectively for Examples 25 to 27.

Table 9 discloses Examples 29 to 32, all falling within the amended claim language of claim 7. They each had a first and second outer layer each comprising primary fatty amidic wax in an amount of 15% to 50% of the amount of primary fatty amidic wax in the respective substrate layer. The percentage values ranged from 17% (Example 30) to 22% (Example 31). Examples 29 to 32 each disclose either 2000 ppm or 2300 ppm zinc stearate (thus from 1,000 ppm to 5,000 ppm of a transition metal salt of stearic acid, or ester of stearic acid) in at least one of the first and second outer layers, and the first and second substrate layers. Finally, they each disclose first and second substrate layers each comprising either 8,000 ppm or 9200 ppm (thus from 4,000 ppm to 10,000 ppm) of oleamide.

The beneficial result (see Table 9) was that the first and second outer layers of the films of Examples 29 to 32 had an outside surface total amide coating ranging from 10.0 to 15.4 micrograms/inch^2, again compared with only 5.3, 8.3, and 4.2 micrograms/inch^2 respectively for Examples 25 to 27.

Films of the invention having total amide wax levels of 10 to 15 μg/in^2 resulted in substantially consistent film performance from the top to the bottom of the roll. Openability, where a folded film separates well on opening bars of packaging equipment, was excellent, and film tracking through packaging equipment, without excessive wax buildup on the packaging equipment, was also substantially consistent throughout film rolls (see page 25 of the specification, lines 5 to 10).

Turning to the art references, on page 3 of the Office Action, at paragraph 7, it is indicated that "[Schoenberg] is silent regarding the use of slip agents in the intermediate layers in a higher amount than the surface layers." Applicants respectfully submit that this statement, while true, unduly extends the teachings of Schoenberg. At column 17, lines 29 to 41 of the reference, it is stated in part that

> [a]dditionally, these percentages may vary slightly as a result of the inclusion or application of additives to the ***surface*** layers such as the silicone mist discussed above or inclusion therein of agents such as slip, antioxidant and anti-block agents . . .A preferred slip agent is Erucamide (available from Humko Chemical under the tradename Kemamide E).
>
> [emphasis mine]

Schoenberg also teaches, further down the same column, that

> The general ranges for inclusion of these agents into the ***surface*** layers 4 and 5 . . . are as follows . . .
> (2) Slip Agent:
> 1000-2000 ppm, preferably
> 1250-1750 more preferably
> about 1500 ppm most preferably
>
> [emphasis mine]

Applicants submit that these teachings are directed to the surface layers of Schoenberg's film.

To be sure, Schoenberg goes on to teach that additional layers and/or minor amounts of various additives of the types described above may be added to the film structure of the present invention as desired, but then qualifies this statement by saying "but care must be taken not to adversely affect the desired physical properties and other characteristics of the inventive film." It is therefore not clear which additives and which layers would be added. In any event, "Additional" in column 18, line 14 can not refer to the intermediate layers 2 and 3, since these have already been disclosed and discussed in detail at e.g. column 14, lines 47 to 59 of the reference.

Applicants respectfully submit that a fair reading of Schoenberg does not support a conclusion that slip agents are present in the intermediate layers *at all,* much less in a higher amount than the surface layers of the multilayer film of Schoenberg.

Plume teaches a composition that can include fatty acid amides (column 2, line 12) and antacids (column 2, line 28) such as calcium or zinc stearate (column 3, line 5). However, the composition of Plume et al. is for a screw cap for a bottle. No film, and importantly for purposes of the present case, no multilayer film, is taught. The calcium and zinc stearates are not taught as aids in controlling migration of a primary fatty acid amide, but simply as antacids. There is no teaching or suggestion in Plume that a calcium or zinc stearate, or for that matter any transition metal salt of stearic acid, or ester of stearic acid, would help control the bloom (migration) of primary fatty acid amides to the surface of a multilayer polymeric film. Thus, it would not have been obvious to the skilled artisan to utilize a transition metal salt of stearic acid, or an ester of stearic acid, in at least one of a first and second substrate layer, or a first and second outer layer, of a multilayer film, to enhance the migration of primary fatty amidic wax from a substrate layer to a respective outer layer of a multilayer film.

Longmoore et al. teach away from the use of erucamide because of its volatility and the problem of plating on processing equipment, causing a clean-up problem (column 1, lines 32 to 37) and teaches away from behenamide, in a surface layer intended for printing, because of its tendency to build up on the doctor blade of a rotogravure printing system (column 1, line 61 to column 2, line 9). Longmoore et al. propose the use of N,N'-bis-alkylene fatty acid amide in one of the surface layers of a film (column 2, lines 24 to 62). In contrast, the present claims are directed to recite a primary fatty amidic wax. N,N'-bis-alkylene fatty acid amide is not a primary fatty amidic wax. Longmoore et al. do not appear to teach a primary fatty amidic wax in each of the first substrate layer, second substrate layer, first outer layer, and second outer layer (cf. claim 7) or in each of the first outer layer, second outer layer, and substrate layer (cf. claim 14).

Longmoore et al. also state that with their invention, "the problem of vaporization encountered with erucamide and to a lesser extent with behenamide is eliminated" (column 5, lines 3 to 5).

In summary, none of the references shows the combination of transition metal salt of stearic acid, or ester of stearic acid with primary fatty amidic wax in a multilayer film. None of the references teaches the use of transition metal salt of stearic acid, or ester of stearic acid to enhance the migration of amidic waxes. The only reference to transition metal salt of stearic acid, or ester of stearic acid relied on in the Office Action is in Plume, and it is only in the context of a monolayer structure, and only associated with use as an antacid.

Applicants additionally point out that claims 7 and 14 as amended require that the first and second substrate layers (claim 7) or the substrate layer (claim 14) each comprise from 4,000 ppm to 10,000 ppm of oleamide. The Office Action points to no teaching of the use of oleamide as a primary fatty amidic wax in any of Schoenberg, Longmoore et al., or Plume, much less its use in the substrate layer of a multilayer film, much less its use in the recited range.

Applicants submit that the cited references alone or in combination do not render obvious the claimed combination.

Applicants respectfully ask for allowance of the claims as now submitted.

If any fees are deemed due, please charge same to Deposit Account No. 07-1765.

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